IN THE CLAIMS

1. – 2. (Canceled)

3. (Currently Amended) ~~The~~ A method of ~~claim 2~~ training a first neural network using a second neural network, the method for execution by a processor and comprising:

creating a model for a desired function as a multi-dimensional function;

determining if the created model fits a simple finite geometry model;

generating a Radon transform to fit the simple finite geometry model, the Radon transform generated by the second neural network;

feeding the desired function through the Radon transform to generate weights; and

training a multilayer perceptron of the first neural network using the weights, wherein the first neural network and the second neural network are dual to each other.

4. (Currently Amended) A computerized system for training a first neural network using a second neural network, the system comprising:

means for creating a model for a desired function as a multi-dimensional function;

means for determining if the created model fits a simple finite geometry model;

means for generating a Radon transform to fit the simple finite geometry model, the means for generating comprising the second neural network;

means for feeding the desired function through the Radon transform to generate weights; and

means for training a multilayer perceptron of the first neural network using the weights, wherein the first neural network and the second neural network are dual to each other.

5. (Currently Amended) A computer readable medium comprising instructions, which when executed on a processor, perform a method of training a first neural network using a second neural network, the method comprising:

creating a model for a desired function as a multi-dimensional function;

determining if the created model fits a simple finite geometry model;

generating a Radon transform to fit the simple finite geometry model, the Radon transform generated by the second neural network;

feeding the desired function through the Radon transform to generate weights; and

training a multilayer perceptron of the first neural network using the weights, wherein the first neural network and the second neural network are dual to each other.

6. – 7. (Canceled)

8. (Currently Amended) ~~The~~ An apparatus ~~of claim 7~~ for training a first neural network using a second neural network, the apparatus comprising:

a model generator to create a model for a desired function as a multi-dimensional function;

a decision module to determine if the created model fits a simple finite geometry model, the decision module coupled to the model generator;

a Radon transform generator to generate a Radon transform to fit the simple finite geometry model, the Radon transform generator coupled to a feeder, wherein the Radon transform generator comprises the second neural network;

the feeder to feed the desired function through the Radon transform to generate weights, the feeder coupled to the decision module; and

a training module to train a multilayer perceptron of the first neural network using the weights, the training module coupled to the Radon transform generator, wherein the first neural network and the second neural network are dual to each other.

9. (Currently Amended) The method of claim [[2]] 3 further comprising:

applying the Radon transform to the model in multiple stages if the created model has a geometry greater than two.

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10. (Currently Amended) The method of claim [[2]] 3, wherein the multilayer perceptron comprises a hidden layer of nodes and connections, and the weights are set on the connections at the hidden layer.

11. (Previously Presented) The method of claim 10 further comprising:

calculating additional weights using the Radon transform; and

interpolating additional nodes in the hidden layer based on the additional weights.

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12. (Previously Presented) The computer readable medium of claim 5, wherein the method further comprises:

applying the Radon transform to the model in multiple stages if the created model has a geometry greater than two.

13. (Previously Presented) The computer readable medium of claim 5, wherein the multilayer perceptron comprises a hidden layer of nodes and connections, and the weights are set on the connections at the hidden layer.

14. (Previously Presented) The computer readable medium of claim 13, wherein the method further comprising:

calculating additional weights using the Radon transform; and

interpolating additional nodes in the hidden layer based on the additional weights.